

## Franklin Township, NJ

### Trapped by Floodwaters, Elizabethtown Water Company Workers Rise to the Occasion



The state-of the art Elizabethtown Canal Road Water Treatment Plant cost approximately \$100 million.



Oleg Kostin, Superintendent of Plant Operations, points to high water mark on Canal Road.

The Elizabethtown Water Company has two water treatment facilities. Finished water from both plants is distributed to customers through the same system. The Raritan-Millstone plant produces 165 million gallons of finished water a day. Production at the three-year-old, state-of-the-art Canal Road Water Treatment Plant is usually 40 million gallons a day.

The Raritan-Millstone plant on Chimney Rock Road South, Bridgewater, had 18 inches of flooding during Hurricane Doria in 1971, a 50-year event. Afterward, management raised the berms protecting the plant to the 500-year flood frequency flood level. River encroachment permits were being sought to add a security wall this year. The newly constructed Canal Road plant is sited above the 500-year flood level.

By 10:00 pm, September 16, 1999, rains from Hurricane Floyd had passed and skies were clearing. Both the Raritan-Millstone and Canal Road water treatment plants were operating normally.

A worker leaving Raritan-Millstone for the night drove toward the railroad grade crossing in front of the plant. As he arrived at the crossing, the gates came down in front of his



truck. He waited in the darkness for an approaching train. Instead, he was astonished to see water rushing down the track toward the plant. Using his cellphone, the worker warned other employees of the imminent flood.

"I expected a few inches," Kostin said. "Within two minutes, the water was up to our knees. Within ten minutes it was up to our chests."



Workers at Raritan-Millstone raced to shut down equipment. Two men waded through chest-high water to gas-powered pumps that couldn't be closed down from the control room. Concerned about falling water pressure in the distribution system, Superintendent Oleg Kostin telephoned the staff at the Canal Road Plant and told them to crank the plant up to maximum capacity.

The water rose until 4 am, eventually putting the Raritan-Millstone plant under 12 feet of water. The Backwash Control

Chamber at the raw water intake for the Canal Road Plant was submerged. Under twenty feet of water, its top was barely visible. There was water everywhere, but new problems arose when the raw water intake screens became clogged with debris. The problem was temporarily solved when a huge tree fell and smashed a hatch cover, allowing water to flow freely into the intake pipes.



At the peak of the crisis, the Canal Road plant was running flat out, producing 75 million gallons of treated water a day - double its rated capacity.

Ten workers, including Kostin, remained at Raritan-Millstone through the night. Trapped by floodwaters, Kostin monitored the situation at Canal Road by cellphone. The crew watched the night rescue operations in awe. From a vantage point at the top of the plant, they could see a fire burning out of control in nearby Bound Brook while clattering news helicopters illuminated the scene. When morning came, US Coast Guard helicopters evacuated the men.

The plant crew's rapid emergency response mitigated potential health hazards due to the flood. The Canal Road plant helped maintain water pressure, even though it was lower than normal. Concerned that lowered water pressure would cause back-siphoning, Elizabethtown stepped up chlorination measures and issued precautionary boil water advisories.

**The crew's efforts succeeded.  
No contamination occurred**

Fortunately, the water remained safe for consumption. Extensive monitoring and testing in the days following Hurricane Floyd showed the crew's efforts succeeded - no contamination occurred.

Post-Floyd, Superintendent Kostin is accelerating plans to install a big emergency generator at the Canal Road Water Treatment Plant. The flooded emergency generator at Raritan-Millstone will be replaced as quickly as possible. Twenty-six damaged pumps, all electrical systems, instrumentation systems and power generation equipment are being replaced or factory reconditioned. The company is moving forward with plans for the security wall. The controls for the Backwash Control Chamber will be moved from the Raw Water Intake on the Raritan River to high ground at the Canal Road plant. Elizabethtown plans to be ready if history repeats itself.